



DCP-2000

Digital Cinema Server

CaptiView Display Closed Caption and Rear Window

User Manual

Version 1.8

Table of Contents

1 Introduction.....	3
1.1 Purpose.....	3
1.2 System Requirements.....	3
1.3 Contact.....	3
2 CaptiView Display Installation Procedure.....	4
2.1 Introduction.....	4
2.2 How to Set Up the CaptiView System.....	5
2.2.1 Installing the License.....	5
2.2.2 CaptiView Configuration.....	7
2.2.3 Operating the CaptiView.....	9
3 Rear Window Caption Configuration	12
4 Appendix A: SB430-10 Set Up Instructions.....	13
4.1 SB430-10 Ethernet Port Set Up.....	14
4.1.1 Configuring the IP Address for SB430-10.....	14
4.1.2 Adding the IP Address of the Digital Cinema Server to the SB430-10.....	14
4.2 SB430-10 Serial Port Set Up.....	15
4.2.1 Configuring the IP Address for SB430-10.....	15
4.2.2 Adding the IP Address of the Digital Cinema Server to the SB430-10.....	15
4.3 Upgrading the SB430-10 Software.....	16
4.3.1 FTP Client.....	16
4.3.2 USB Flash Update.....	16
4.4 Changing the Auditorium on the SB430-10.....	16
5 Acronyms	17
6 Document Revision History.....	18

1 Introduction

1.1 Purpose

This manual explains how to set up the DCP-2000 in order to display Closed Caption using the Doremi CaptiView device. This document explains how to set up the DCP-2000 in order to display the Closed Caption using the "Rear Window" device with Serial or Ethernet Communication. In Appendix A, there is more information on how to set up the SB430-10, which is a device that allows non-Doremi Digital Cinema Servers to interface with the CaptiView device.

1.2 System Requirements

This manual is for operating the CaptiView device software versions 2.0.0 and higher. The Rear Window device can be used on any software versions. The SB430-10 device can be used on various software versions, which depend on the provisions of the digital server. For earlier software versions, please see earlier revisions of this document.

1.3 Contact

If in need of help or assistance, please contact Doremi Labs Technical Support at 1-866-484-4004 or email at support@doremicinema.com.

2 CaptiView Display Installation Procedure

2.1 Introduction

The CaptiView is an in-theater closed caption viewing system for the hearing impaired. The system is composed of three key elements: CaptiView license, CaptiView display, and Captiview transmitter.



Figure 1: CaptiView Display

- CaptiView Display is a portable LCD screen attached to a flexible arm that fits in any standard cup holder on a theater seat.



Figure 2: CaptiView Transmitter

- CaptiView Transmitter is a custom encrypted wireless dongle that is plugged into a USB port on a Doremi Digital Cinema Server.

Warning: DO NOT flip the switch on the "Doremi Cinema" side of the transmitter (see Figure 2 above). This will delete the firmware and lead to the device becoming inoperable.

2.2 How to Set Up the CaptiView System

2.2.1 Installing the License

The CaptiView license is required to enable a Doremi Digital Cinema Server to playback the Closed Caption data contained in the Digital Cinema Package (DCP). The license needs to be installed before setting up the CaptiView system. Contact Doremi Technical Support at support@doremicinema.com to receive the Closed Caption license.

- Insert the USB with the Closed Caption license update into the unit.
- The "Ingest Manager" GUI window will appear.
- Select the file that contains the CaptiView license and then click on the "Ingest" button (see Figure 3 below).
- Reboot the unit to complete the ingest process.

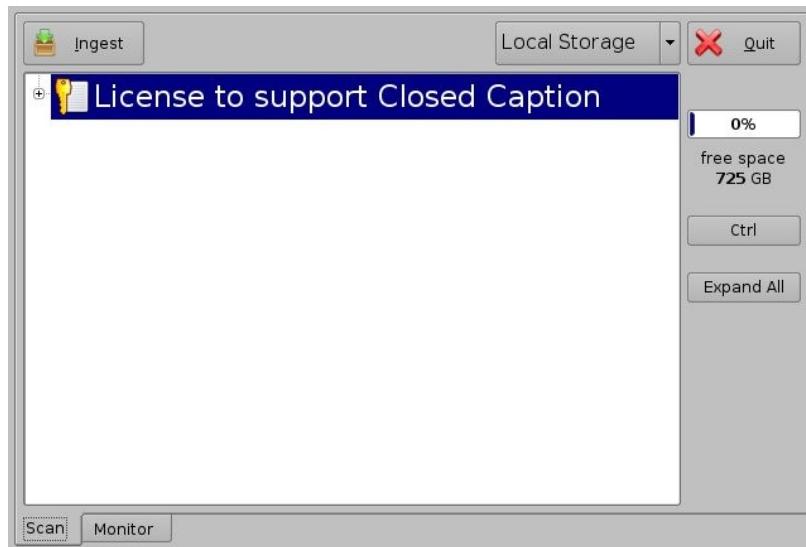


Figure 3: Ingest Window

- Once the ingest is complete check the license information by going to “**Menu**”--> “**Control Panel**”--> “**License Manager**”.
- Follow the steps below for “How to Configure the CaptiView System” below to finalize the set up process:

Note: The Doremi Digital Cinema Servers (DCP-2000, DCP-2K4, or ShowVault) must have software 2.0.0-0 or higher to support the CaptiView. It is recommended to test the CaptiView system to ensure that it operates correctly before using it in a live theater (get a Digital Cinema Package and test the CaptiView device upon completion of the set up).

- Plug the CaptiView transmitter dongle into a Doremi Digital Cinema Server USB port only.
- Go to “Menu” and then click “Control Panel”.
- Select and open the “Device Manager” icon.

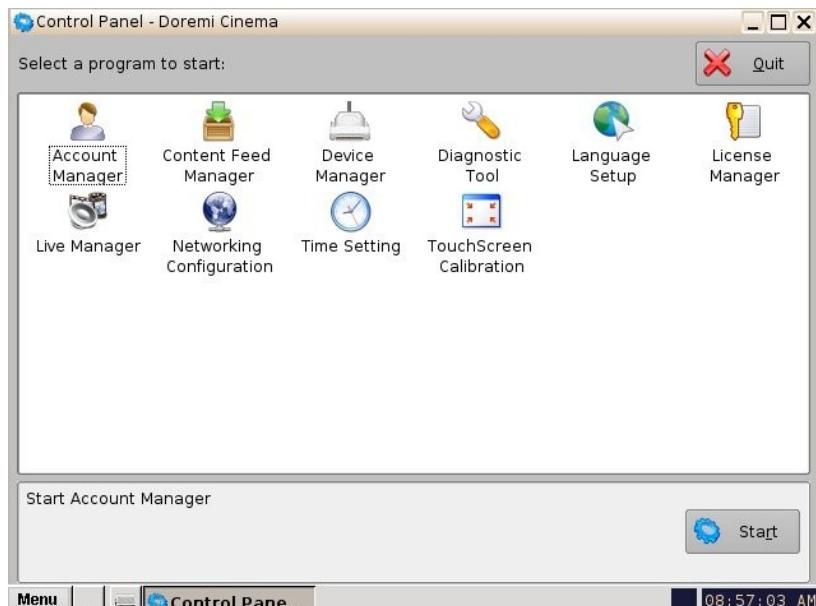


Figure 4: Control Panel Window

- From the “Device Manager” window click on the “Add” button.
- The “Add Device” window will appear.
- Select the "Closed Caption" device.

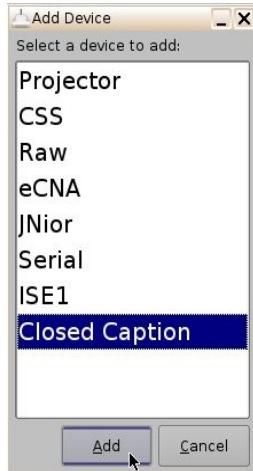


Figure 5: List of Devices - Closed Caption Example

- Click the “Add” button (see Figure 5 above).
- The user will now be back to the Device Manager GUI to finish configuring the device.

2.2.2 CaptiView Configuration

- Check the “Enabled” box to enable this feature.
- It is recommended to leave the default settings as they are, except for the “Auditorium” field.
- In the “Auditorium” field choose any other channel than 0. For example, choose 1, 2, 3, etc., but do not leave the channel set at 0. The number, once saved, will be saved to the USB transmitter which then must be power-cycled by unplugging and then re-plugging the transmitter (this applies to software versions 2.0.10 and higher).

Note: To change the current auditorium number (if using software versions 2.07 or below), contact Doremi Technical Support to receive a hot fix. In software version 2.0.10 and higher, the user can change the auditorium setting from the "Device Manager" GUI.

- Define the "Play Offset", "Idle Text", and "Idle Time".
 - Play Offset: This feature offsets the Closed Captioning data in the form of milliseconds.
 - Idle Text: The default text that is shown on the display.
 - Idle Time: The time it takes for default Idle Text to appear after loss of input.
- Click the "Save" button.

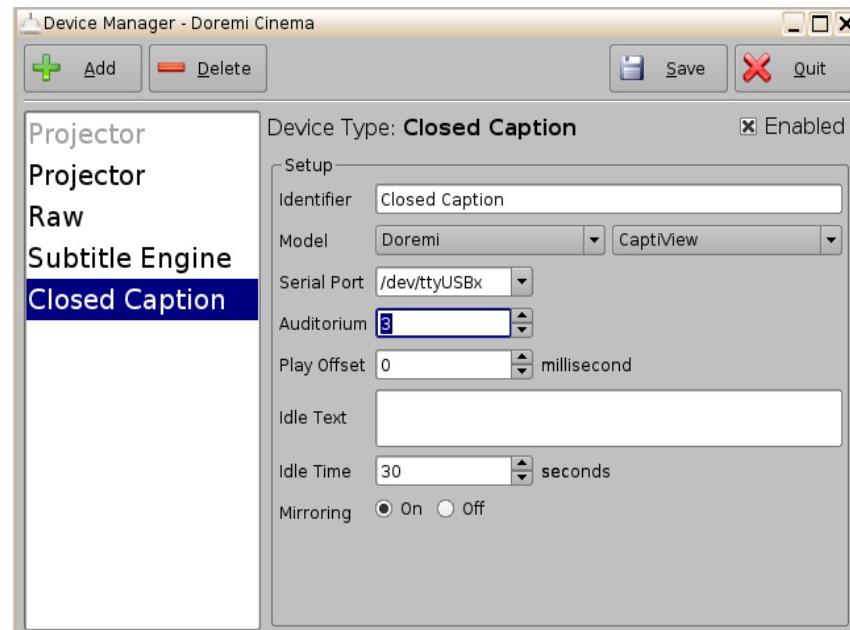


Figure 6: Closed Caption Configuration Window

2.2.3 Operating the CaptiView

- To turn the CaptiView display ON locate the small switch on the right side of the device and set it to the left (see Figure 7 below).



Figure 7: CaptiView On/Off Switch

- When the CaptiView device is on it will read “*CaptiView set to auditorium 1, Press A to switch auditorium or C to connect A C L*”.



Figure 8: CaptiView Start-Up Message



Figure 9: CaptiView Button View

- The letters "A", "C", and "L" represent the three buttons that are on the bottom of the CaptiView device (see Figure 9 above).
 - "A" stands for Auditorium and is the first button from the left.
 - "C" stands for Connect and is the second or middle button.
 - "L" stands for Language (a feature that will be included in a future release) and is the third or last button from the left.
- Press the "A" button repeatedly until the desired auditorium number appears.
- The CaptiView display must be set to the same auditorium number as the CaptiView transmitter in order to establish a connection.
- Press the "C" button to connect to the Auditorium.
- A message saying "Connecting to Auditorium #" will appear:



Figure 10: Connection Message

Note: If the device is being charged while it is “ON,” it will show as charging (even when it is not charging anymore), until the device is turned off and on again. The charge time will take approximately 2 hours to complete and will last for 24 hours of playing time.

- Once the CaptiView system is connected play a clip with closed captioning to check if it is working properly.

Note: In case the Digital Cinema Server does not detect the CaptiView Transmitter, follow the steps below:

- Shut off the server (do not reboot or log off).
- Remove all USB devices.
- Power the server back on.
- Plug the CaptiView Transmitter in and the server should detect it.

3 Rear Window Caption Configuration

- To perform this set up, make sure the license is installed and Closed Caption is enabled. See steps above to install the license and enable the Closed Caption.
- Open the "Device Manager".
- Select the Closed Caption device and check the enable box on the top right (see Figure 11 below).
- In the "Model" field click in the drop-down menu and select "Wgbh" (see Figure 11 below).
- The second drop-down menu in the "Model" field will change to "RWC" automatically (see Figure 11 below).
- The "Serial Port" field drop-down menu will change to "/dev/ttyS0" automatically (see Figure 11 below).

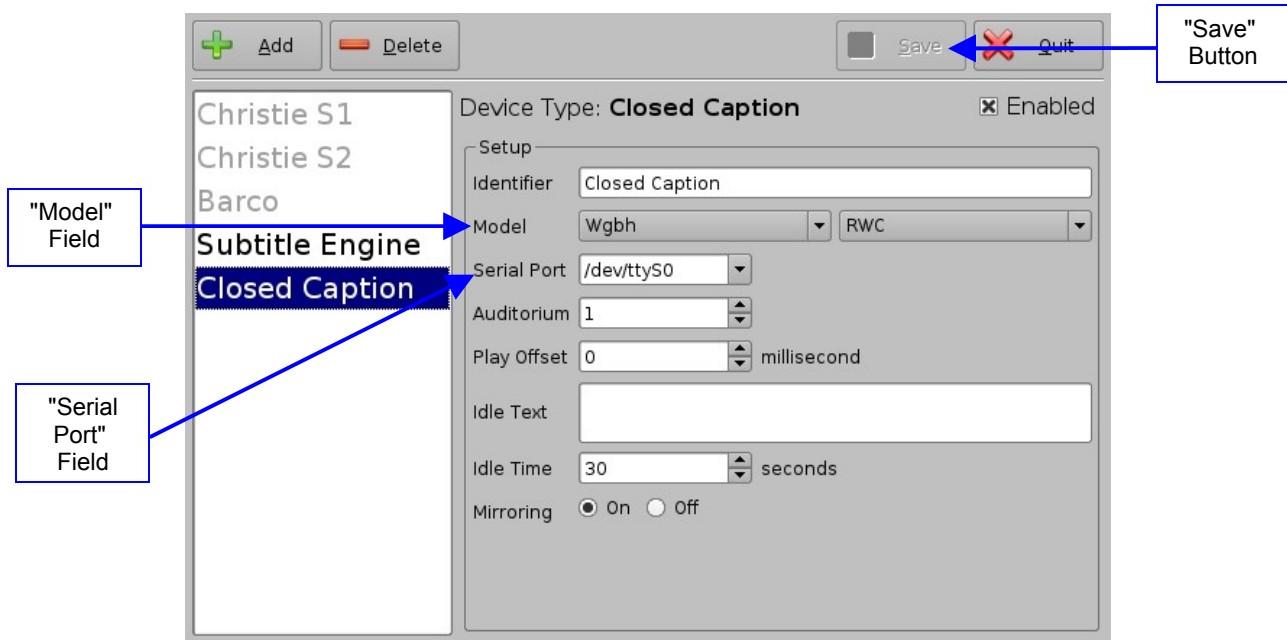


Figure 11: Rear Window Caption Configuration Example

- Click the "Save" button when finished to save the configuration (see Figure 11 above).

4 Appendix A: SB430-10 Set Up Instructions

The SB430-10 device is an option for customers who do not have a Doremi Digital Cinema Server, but still want to use the CaptiView Device. There are two ways to set up the SB430-10. First, the Ethernet Port is the primary way to set up the SB430-10 device. The secondary way to set up the SB430-10 is to use the Serial Port, which is a back-up mechanism when the Ethernet Port fails or does not work properly.



Figure 12: SB430-10



Figure 13: SB430-10

4.1 SB430-10 Ethernet Port Set Up

- Remove the SB430-10 from packing and begin to set up near a power outlet and computer that has a free Ethernet port.
- The default IP address of the SB430-10 is "**192.168.9.10**"
- Set your computer's IP address in the range '192.168.9.xx', xx being in the range (2-254 except 10).
- Connect the SB430-10 with an Ethernet cable to the newly configured port, and power ON.
- Download and install the program "PuTTY" (or any ssh client) on the computer you just assigned the new IP address to.
- Connect to the default IP **192.168.9.10** on port 22 using the ssh client.
- When the unit is done booting up login as "root".
 - Password for "root" is: "**veeone**"
 - It is recommended to change the "root" password by typing the following command and following the on-screen instructions: "**passwd**"

4.1.1 Configuring the IP Address for SB430-10

- To configure the IP of the SB430-10 type the following command:
 - **echo -n xxx.xxx.xxx.xxx > /doremi/etc/ip_addr** (xxx.xxx.xxx.xxx = the desired IP address) and then press the "Enter" key.
- To configure the netmask type the following command:
 - **echo -n xxx.xxx.xxx.xxx > /doremi/etc/netmask** and then press the "Enter" key.
- To configure the gateway type the following command:
 - **echo -n xxx.xxx.xxx.xxx > /doremi/etc/gateway** and then press the "Enter" key.

4.1.2 Adding the IP Address of the Digital Cinema Server to the SB430-10

- To add the IP address, type the following command:
 - **echo -n xxx.xxx.xxx.xxx > /doremi/etc/s430-10/ip.conf** and then press the "Enter" key.
- Reboot the SB430-10 for the changes to take effect.
- Connect the CaptiView Transmitter to the USB port on the SB430-10 and then go back to Section 2 of this manual to finish the setup.

4.2 SB430-10 Serial Port Set Up

- Remove the SB430-10 from packing and begin to set up near a power outlet and computer that has a serial port.
- The serial cable required for a proper connection is a female to female pin to pin cable, which should be provided in the package.
 - Serial connection settings are: Speed 115200, Data bits: 8, Stop bits: 1, Parity: None, Flow control: None
 - Connect and switch the device on and wait for it to boot.
- When the unit is done booting up login as "root".
 - Password for "root" is: "**veeone**"
 - it is recommended to change the root password by doing the command and following the on-screen instructions: "**passwd**"

4.2.1 Configuring the IP Address for SB430-10

- To configure the IP of the SB430-10 type the following command:
 - **echo -n xxx.xxx.xxx.xxx > /doremi/etc/ip_addr** (xxx.xxx.xxx.xxx = the desired IP address) and then press the "Enter" key.
- To configure the netmask type the following command:
 - **echo -n xxx.xxx.xxx.xxx > /doremi/etc/netmask** and then press the "Enter" key.
- To configure the gateway type the following command:
 - **echo -n xxx.xxx.xxx.xxx > /doremi/etc/gateway** and then press the "Enter" key.

4.2.2 Adding the IP Address of the Digital Cinema Server to the SB430-10

- To add the IP address, type the following command:
 - **echo -n xxx.xxx.xxx.xxx > /doremi/etc/s430-10/ip.conf**
- Reboot the SB430-10 for the changes to take effect.
- Connect the CaptiView Transmitter to the USB port on the SB430-10 and go back to Section 2 of this manual to finish the setup.

4.3 Upgrading the SB430-10 Software

There are two ways to upgrade the software on the SB430-10. One way is to use an FTP client (e.g., Core FTP or Filezilla) and the other is to use a USB flash drive to perform the upgrade.

4.3.1 FTP Client

- Make sure that an FTP client is installed on the computer.
- Turn the SB430-10 ON and make sure it is able to ping to the network.
- Open the FTP client and connect using the IP of the SB430-10 under port 21 and login as the "root" user and enter the appropriate password.
- Add the update package ("PKG file") to the folder **"/doremi/etc/rc.once"** and then reboot.
- To check if the upgrade was successful open an SSH session and type the following command: **'more /doremi/etc/version'** and make sure that the version matches that of the ".PKG" file.

4.3.2 USB Flash Update

- Create a folder in the USB drive and name it "**doremi**", then inside the "**doremi**" folder create another folder and name it "**update**". For example, **'/doremi/update'**.
- Copy the ".PKG" file to the path of the USB flash **'/doremi/update/'** then safely unmount the USB flash drive.
- Put the USB flash drive in place of the CaptiView transmitter. Wait for the light to stop blinking and then do a reboot (or power cycle).
- To check if the upgrade was successful open an SSH session and type the following command: **more /doremi/etc/version** and make sure that the version matches that of the ".PKG" file.

4.4 Changing the Auditorium on the SB430-10

- Connect to the SB430-10 via ssh session.
- Login as username "root".
- Type: **echo -n aud_number > /doremi/etc/s430-10/audi.conf** and then press the "Enter" key.
- Reboot for the changes to take effect.

5 Acronyms

Term	Definition
DCP	Digital Cinema Package
USB	Universal Serial Bus
UUID	Universally Unique Identifier
RWC	Rear Window Caption

6 Document Revision History

Date	Version	Description
09/28/2010	1.6	Rear Window Closed Caption section updated. Software version updated to reflect version 2.0.0.
12/27/2010	1.7	All sections revised. New CaptiView Device and SB430-10 pictures added.
01/10/2011	1.8	Section 2.2.2 revised.